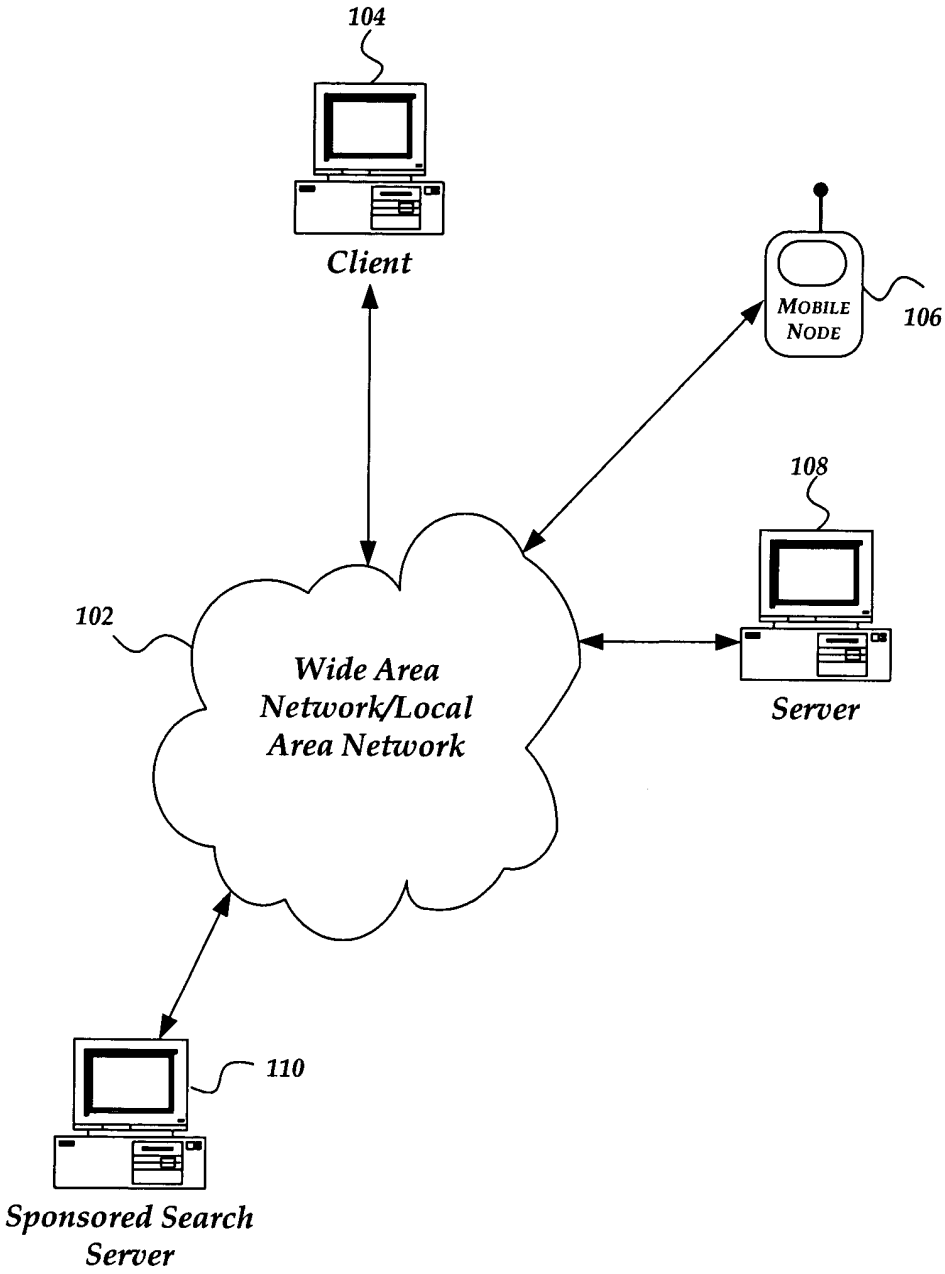

104
Client
MOBILE NODE
106
108
Server
102
Wide Area Network/Local Area Network
110
Sponsored Search Server

FIG. 1

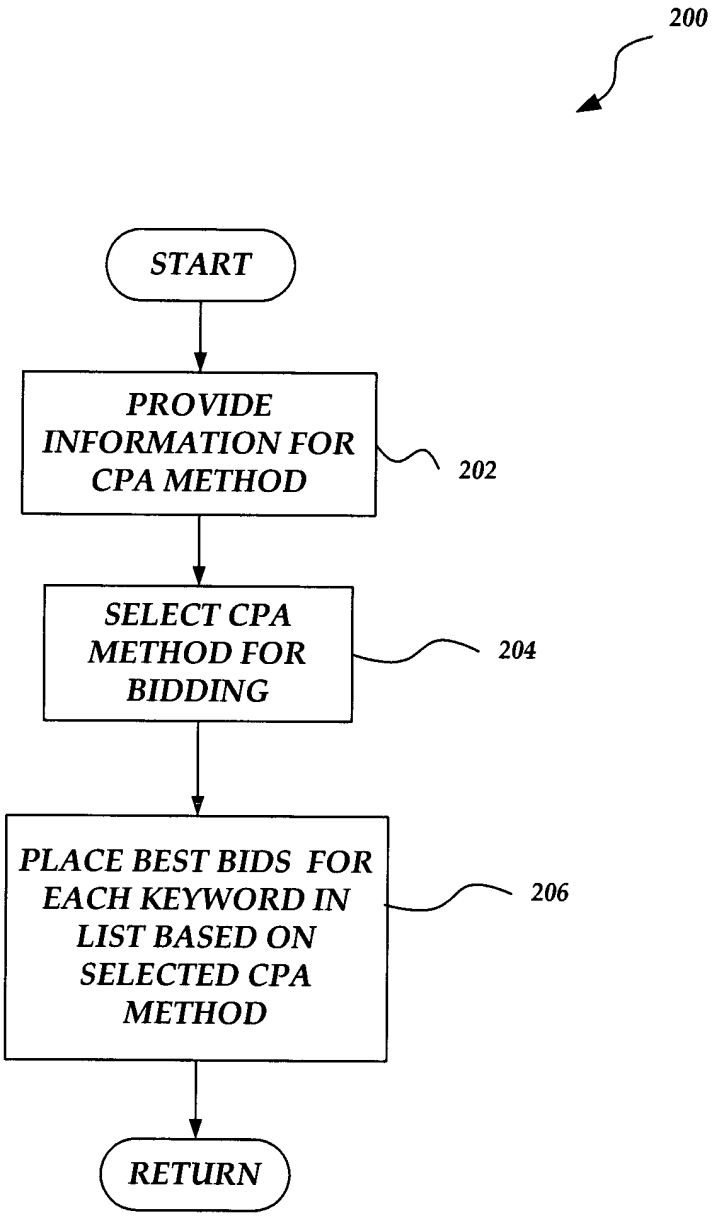

200
START
PROVIDE INFORMATION FOR CPA METHOD
202
SELECT CPA METHOD FOR BIDDING
204
PLACE BEST BIDS FOR EACH KEYWORD IN LIST BASED ON SELECTED CPA METHOD
206
RETURN

FIG. 2

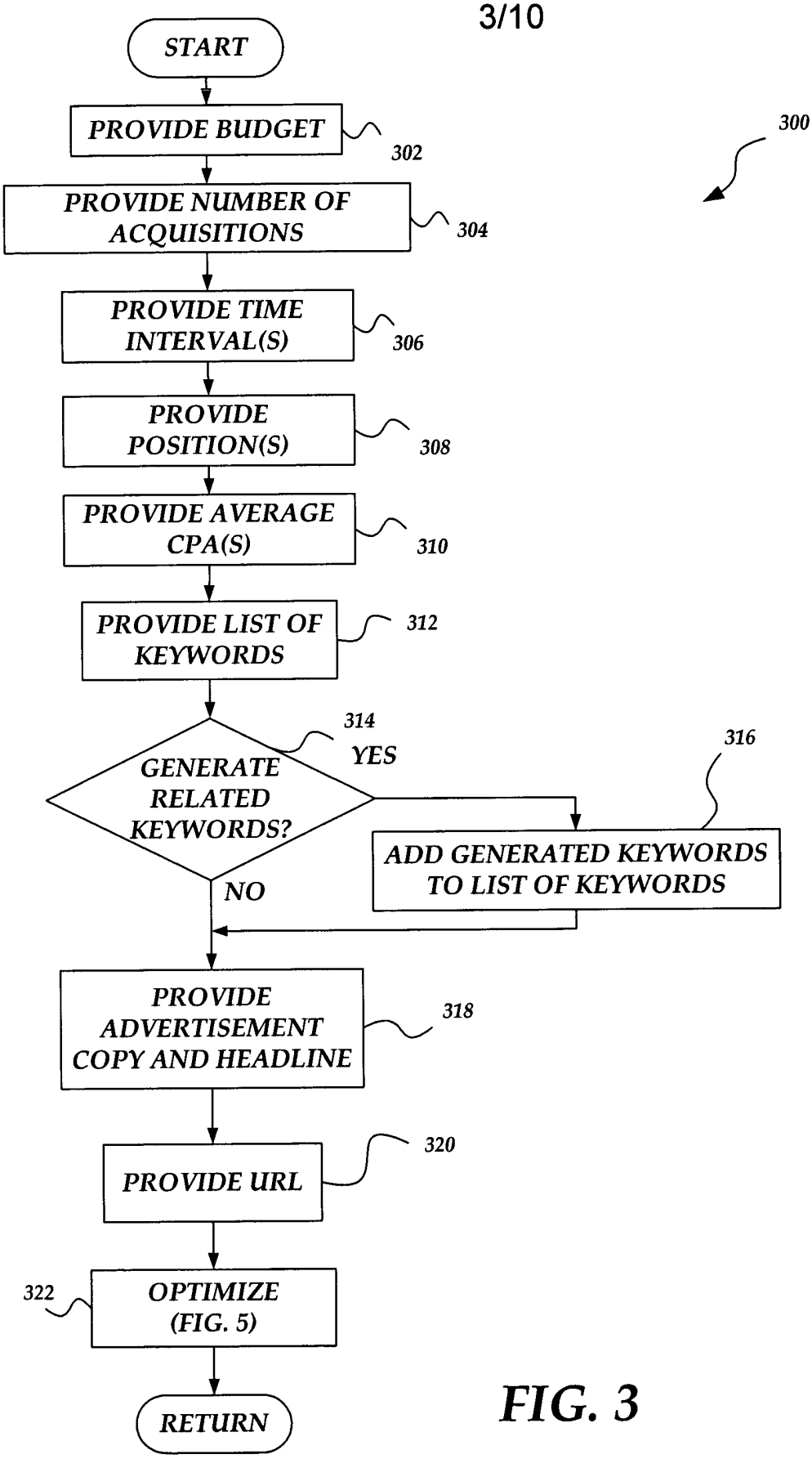

START
PROVIDE BUDGET
302
300
PROVIDE NUMBER OF ACQUISITIONS
304
PROVIDE TIME INTERVAL(S)
306
PROVIDE POSITION(S)
308
PROVIDE AVERAGE CPA(S)
310
PROVIDE LIST OF KEYWORDS
312
314
GENERATE RELATED KEYWORDS?
YES
316
ADD GENERATED KEYWORDS TO LIST OF KEYWORDS
NO
PROVIDE ADVERTISEMENT COPY AND HEADLINE
318
PROVIDE URL
320
322
OPTIMIZE (FIG. 5)
RETURN

FIG. 3

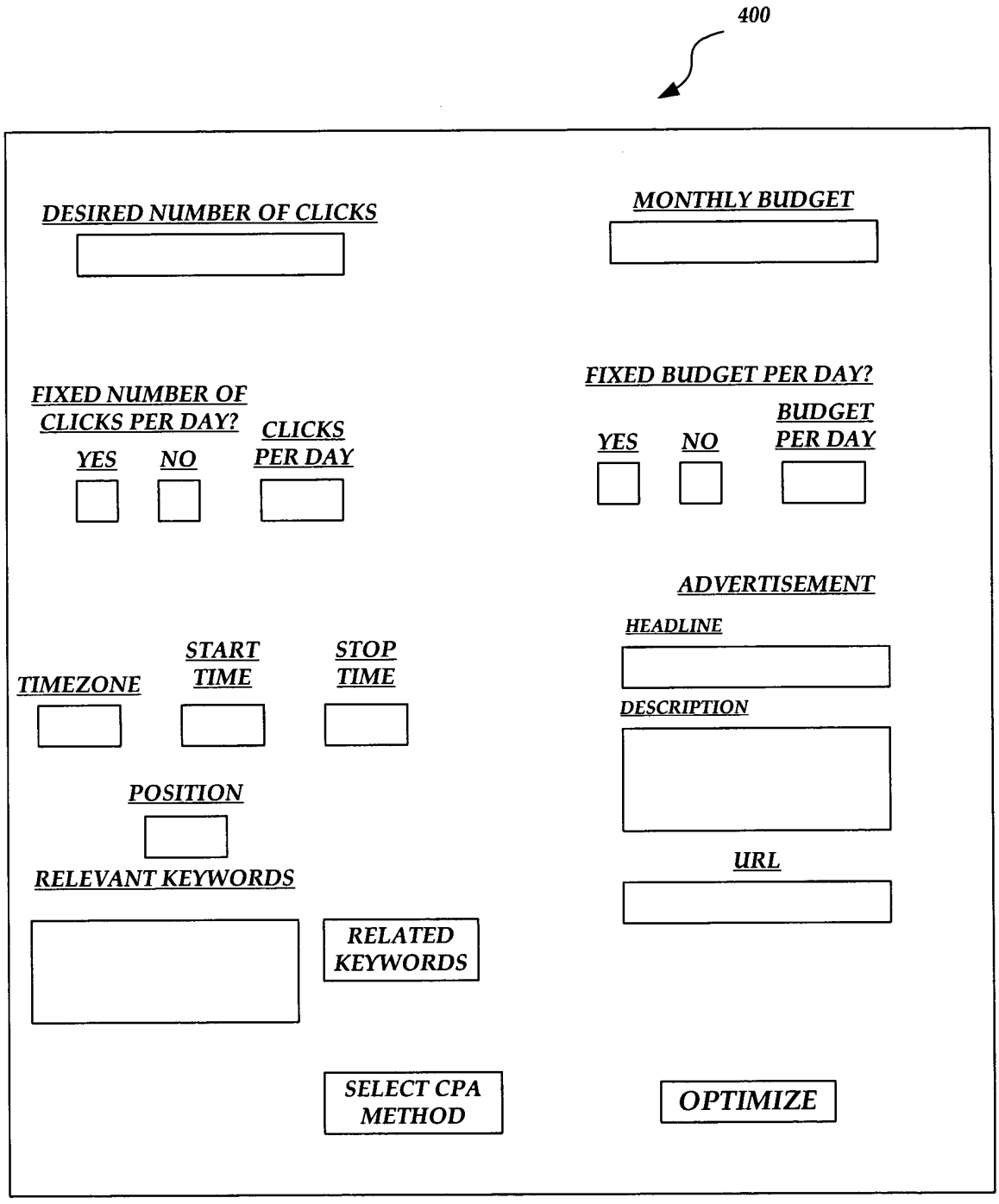

400
DESIRED NUMBER OF CLICKS
MONTHLY BUDGET
FIXED NUMBER OF CLICKS PER DAY?
YES
NO
CLICKS PER DAY
FIXED BUDGET PER DAY?
YES
NO
BUDGET PER DAY
ADVERTISEMENT
HEADLINE
TIMEZONE
START TIME
STOP TIME
DESCRIPTION
POSITION
URL
RELEVANT KEYWORDS
RELATED KEYWORDS
SELECT CPA METHOD
OPTIMIZE

FIG. 4

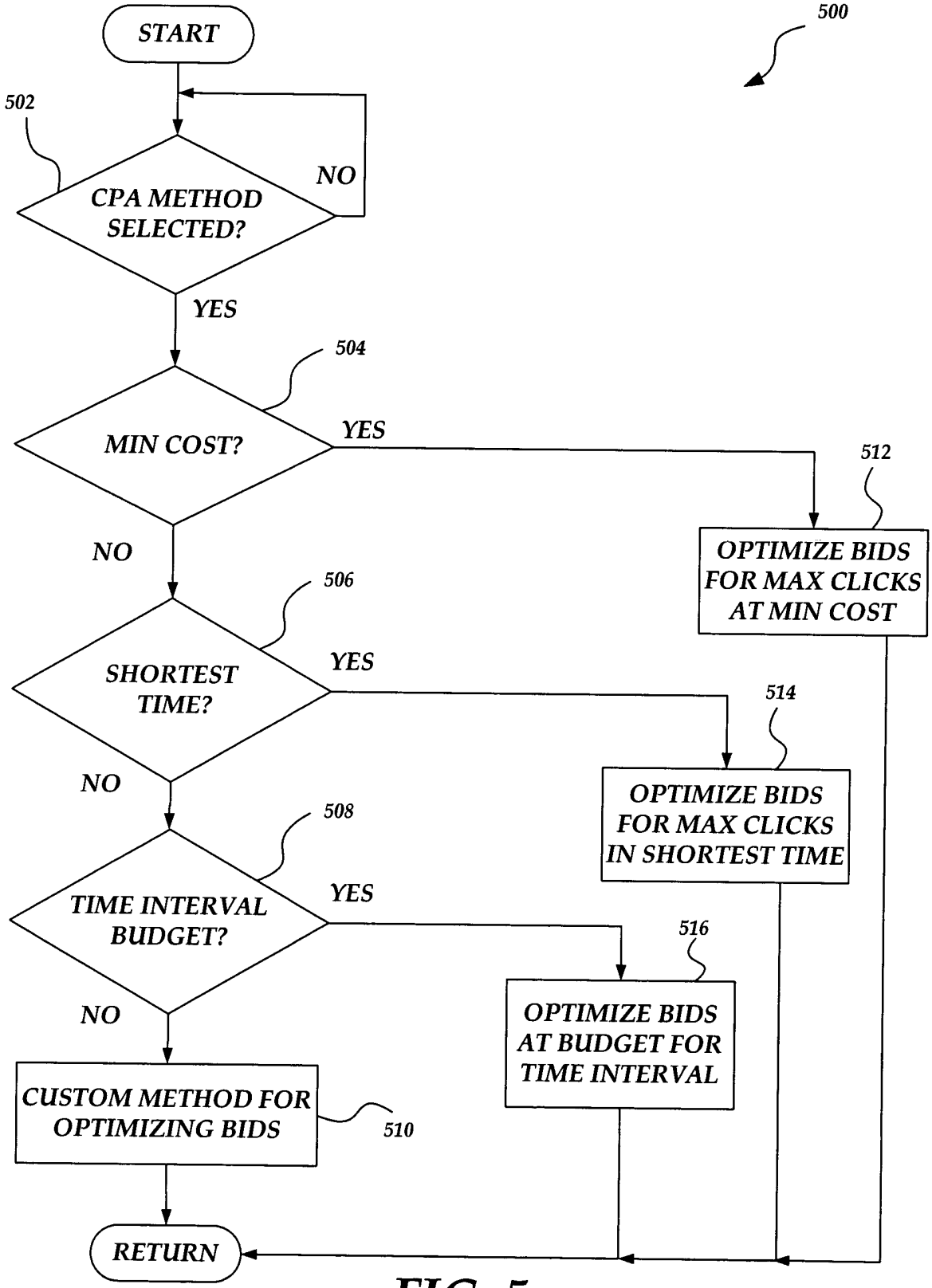

500
START
502
CPA METHOD SELECTED?
NO
YES
504
MIN COST?
YES
512
OPTIMIZE BIDS FOR MAX CLICKS AT MIN COST
NO
506
SHORTEST TIME?
YES
514
OPTIMIZE BIDS FOR MAX CLICKS IN SHORTEST TIME
NO
508
TIME INTERVAL BUDGET?
YES
516
OPTIMIZE BIDS AT BUDGET FOR TIME INTERVAL
NO
CUSTOM METHOD FOR OPTIMIZING BIDS
510
RETURN

FIG. 5

```
// Program Inputs
maxClicks = input(Advertiser specified max click goal);
moneyRemaining = input(Advertiser's monthly budget);

// Program Outputs
// Spending Cap for all keywords and time intervals
SpendCap(k,i) - Spend cap for keyword k, time interval i

// Bids for all keywords and time intervals
Bid(k,i) - Bids for keyword k, time interval i

// Estimated position for all keywords and time intervals
EstimatedPosition(k,i) - Estimated position for keyword k, time interval i

// Estimated Clicks for all keywords and time intervals
EstimatedClicks(k,i) - Estimated Clicks for keyword k, time interval i

// Program starts here
// This is a greedy algorithm. It tries to allocate money in the most cost efficient manner possible. It greedily
// tries to buy clicks at the cheapest CPC possible without worrying about which time period it is for or what
// keyword it is or what position the advertisement gets listed.

Table T =  Order table H above by ascending order of Average CPC amounts;
// Lowest average CPCs are listed before highest average CPC irrespective of the keyword or positions //
used.

totalProjSpend = 0;  // Initially the projected spend is 0
totalProjClicks = 0; // Initially no clicks are allocated

// k - keyword, i - time interval, j - position
foreach row r(k,i,j) in T
{
 // How many more clicks can we can use before we hit the Max Click
 // goal specified by the Advertiser?
 clicksRemaining = maxClicks - totalProjClicks;

 // Clicks to use up in time period ti, for keyword k, position j.
 // c(k,i,j) is the clicks available .
 // Use the lesser of clicks available in the time interval or
 // remaining click goal.
 clicksToUse = min( clicksRemaining, c(k,i,j) );

 // If Money remaining is not enough to use up all the clicks available
 // in this time period, use as many clicks as the money remaining allows.
 // a(k,i,j) is the average cost per click.
 if ( moneyRemaining < clicksToUse X a(k,i,j) ) {
  // not enough money, reduce the clicks
  clicksToUse = floor( moneyRemaining / a(k,i,j) );
 }

 SpendCap(k,i) = clicksToUse X a(k,i,j);
 Bid(k,i) = f(a(k,i,j)); // f is a function of average cost per click
 EstimatedClicks(k,i) = clicksToUse;
 EstimatedPosition(k,i) = j;

 moneyRemaining = moneyRemaining - SpendCap(k,i);
 totalProjSpend = totalProjSpend + SpendCap(k,i);
 totalProjClicks = totalProjectedClicks + clicksToUse;

}

Output( Bid(k,i), SpendCap(k,i), EstimatedClicks(k,i), EstimatedPosition(k,i), totalProjSpend, totalProjClicks,
moneyRemaining);

// Note - Not all money may be spent if not enough clicks are projected for all the keywords specified.
```

FIG. 6

KEYWORD	TIME INTERVAL	POSITION	AVERAGE CPC	CLICKS AVAILABLE
kw1	t1	p1	a(1,1,1)	c(1,1,1)
kw1	t1	p2	a(1,1,2)	c(1,1,2)
...	...	...	...	...
kw1	t2	p1	a(1,2,1)	c(1,2,1)
kw1	t2	p2	a(1,2,2)	c(1,2,2)
...	...	...	...	...
...	...	...	...	...
kw2	t1	p1	a(2,1,1)	c(2,1,1)
kw2	t1	p2	a(2,2,2)	c(2,2,2)
kwk	ti	pj	a(k,i,j)	c(k,i,j)

FIG. 7

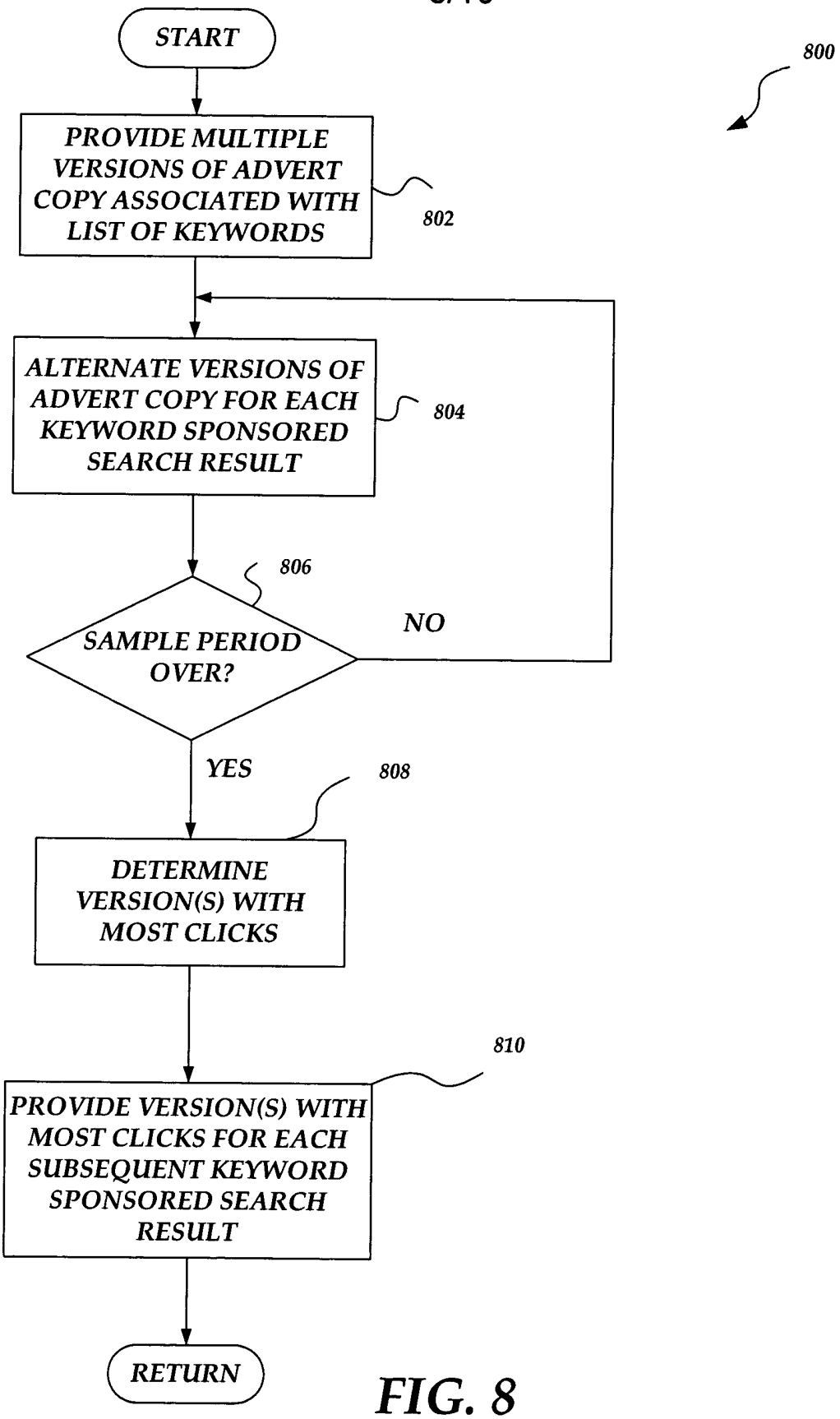
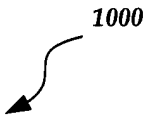

START
800
PROVIDE MULTIPLE VERSIONS OF ADVERT COPY ASSOCIATED WITH LIST OF KEYWORDS
802
ALTERNATE VERSIONS OF ADVERT COPY FOR EACH KEYWORD SPONSORED SEARCH RESULT
804
806
SAMPLE PERIOD OVER?
NO
YES
808
DETERMINE VERSION(S) WITH MOST CLICKS
810
PROVIDE VERSION(S) WITH MOST CLICKS FOR EACH SUBSEQUENT KEYWORD SPONSORED SEARCH RESULT
RETURN

FIG. 8

900

	Search Term Delete	Listing Title	Your Bid Revise Bid	Est. Position	Est. Clicks/Day	Est. Daily Cost
☐	data recovery	Data recovery	$ 0.35	3	50	$17.50
☐	disk doctor	Data recovery	$ 0.33	3	45	$14.85
☐	hard disk recovery	Data recovery	$ 0.22	1	20	$4.40
☐	data recovery software	Data recovery	$ 0.28	4	14	$3.92
☐	free data recovery software	Data recovery	$ 0.15	1	12	$1.80
☐	disk disaster recovery	Data recovery	$ 0.19	1	9	$1.71
☐	data loss recovery	Data recovery	$ 0.08	1	10	$0.80
☐	hard drive data recovery	Data recovery	$ 0.09	1	6	$0.54
☐	disk backups	Disk backups	$ 0.26	2	80	$20.80
☐	disk backup software	Disk backups	$ 0.32	4	37	$11.84
☐	hard disk backups	Disk backups	$ 0.12	1	30	$4.32
☐	backup disk image	Disk backups	$ 0.12	1	12	$1.44
☐	disk to disk backup	Disk backups	$ 0.06	1	8	$0.80
	Total (daily)				**333**	**$83.29**
	Total (monthly)				**9990**	**$2498.70**

FIG. 9



MONTH YEAR	EST. MONTH COST		1 ACTUAL DAILY COST	2 ACTUAL DAILY COST	3 ACTUAL DAILY COST	4 ACTUAL DAILY COST
5 ACTUAL DAILY COST	6 ACTUAL DAILY COST	7 ACTUAL DAILY COST	8 ACTUAL DAILY COST	9 ACTUAL DAILY COST	10 ACTUAL DAILY COST	11 ACTUAL DAILY COST
12 ACTUAL DAILY COST	13 ACTUAL DAILY COST	14 ACTUAL DAILY COST	15 ACTUAL DAILY COST	16 EST. DAILY COST	17 EST. DAILY COST	18 EST. DAILY COST
19 EST. DAILY COST	20 EST. DAILY COST	21 EST. DAILY COST	22 EST. DAILY COST	23 EST. DAILY COST	24 EST. DAILY COST	25 EST. DAILY COST
26 EST. DAILY COST	27 EST. DAILY COST	28 EST. DAILY COST	29 EST. DAILY COST	30 EST. DAILY COST	31 EST. DAILY COST	

FIG. 10